What is Claimed:

1. An apparatus for manipulating a load, said apparatus comprising:

a first support structure for supporting the load;

a second support structure for supporting the load; and

a coupling coupled between said first support structure and said second support structure, said coupling including a compliant mechanism for providing a compliant range of motion to the load about a rotative axis where a center of gravity of the load is located away from said rotative axis, said rotative axis being a non-vertical axis.

2. The apparatus of claim 1 wherein said compliant mechanism is configured to be adjusted manually to account for variations in the load.

3. The apparatus of claim 1 wherein said compliant mechanism includes at least one pneumatic actuator.

4. The apparatus of claim 1 wherein said compliant mechanism includes at least one spring.

5. The apparatus of claim 1 wherein said coupling provides at least one additional range of motion to the load in a direction or about an axis.

6. The apparatus of claim 1 wherein said apparatus is a manipulator for manipulating a test head for testing integrated circuits.

7. The apparatus of claim 1 wherein said second support structure supports said load through a second coupling, said second coupling providing the load with a range of motion about a second rotative axis.

8. The apparatus of claim 1 wherein said first support structure provides the load with a first substantially vertical range of motion, said second support structure provides the load with a second substantially vertical range of motion, said second substantially vertical range of motion being different from said first substantially vertical range of motion.

9. The apparatus of claim 8 wherein at least one of said first substantially vertical range of motion and said second substantially vertical range of motion is a compliant vertical range of motion.

10. The apparatus of claim 9 wherein a position of the load within said compliant vertical range of motion is adjusted by adjusting a fluid pressure supplied to said apparatus, the fluid pressure being adjusted via a control unit located away from said apparatus.

11. A method of manipulating a load, said method comprising the steps of:

providing a first support structure for supporting the load;

rotatively coupling the first support structure to a second support structure for supporting the load about a rotative axis such that a center of gravity of the load is located away from the rotative axis, the rotative axis being a non-vertical axis;

providing a compliant range of motion to the load about the rotative axis; and

manipulating the load about the rotative axis using the compliant range of motion.

12. The method of claim 11 wherein said manipulating step includes manually adjusting the load about the rotative axis.

13. The method of claim 11 wherein said step of providing a compliant range of motion includes operating at least one pneumatic actuator positioned between the first support structure and the second support structure.

14. The method of claim 11 wherein said step of providing a compliant range of motion includes providing at least one spring between the first support structure and the second support structure.

15. The method of claim 11 further comprising the step of:

providing at least one additional range of motion to the load through a coupling between the first support structure and the second support structure.

16. The method of claim 11 further comprising the step of:

rotatively coupling the second support structure to the load to provide the load with a range of motion about a second rotative axis.

17. The method of claim 11 further comprising the steps of:

providing the load, through the first support structure, with a first substantially vertical range of motion; and

providing the load, through the second support structure, with a second substantially vertical range of motion, the second substantially vertical range of motion being different from the first substantially vertical range of motion.

18. The method of claim 17 wherein at least one of the first substantially vertical range of motion and the second substantially vertical range of motion provided is a compliant vertical range of motion.

19. The method of claim 18 further comprising the step of:

adjusting, via a remote control unit, a position of the load within the compliant vertical range of motion by adjusting a fluid pressure which at least partially provides the compliant vertical range of motion.

20. An apparatus for manipulating a load, said apparatus comprising:

a first support structure for supporting the load, said first support structure providing the load with a first substantially vertical range of motion;

a second support structure for supporting the load, said second support structure providing the load with a second substantially vertical range of motion relative to said first substantially vertical range of motion; and

a coupling between said first support structure and said second support structure, said coupling providing at least one additional range of motion to the load in a direction or about an axis, the additional range of motion not being in a substantially vertical direction.

21. The apparatus of claim 20 wherein at least one of said first substantially vertical range of motion and said second substantially range of motion is a compliant vertical range of motion.

22. The apparatus of claim 21 wherein a position of the load within the compliant range of motion is adjusted by adjusting a fluid pressure supplied to said apparatus, said fluid pressure being adjusted via a control unit located away from said apparatus.

23. The apparatus of claim 20 wherein said apparatus is a manipulator for manipulating a test head for testing integrated circuits.

24. The apparatus of claim 20 wherein said coupling is a rotative coupling.

25. The apparatus of claim 24 wherein said rotative coupling includes a compliant mechanism for providing the additional range of motion as a rotative compliant range of motion about a rotative axis.

26. The apparatus of claim 24 or 25 wherein said second support structure supports said load through a second rotative coupling, said second rotative coupling providing said load with a rotative range of motion about a second rotative axis.

27. The apparatus of claim 25 wherein said rotative axis is not rotative about a substantially vertical plane.

28. The apparatus of claim 20 wherein said at least one additional range of motion includes a substantially horizontal range of motion.

29. A method of manipulating a load, said method comprising the steps of:

moving the load to a first position within a first substantially vertical range of motion of the load, the first substantially vertical range of motion being provided by a first support structure;

moving the load to a second position within a second substantially vertical range of motion of the load relative to the first substantially vertical range of motion, the second substantially vertical range of motion being provided by a second support structure; and

providing a coupling between the first support structure and the second support structure, the coupling providing an additional range of motion to the load in a direction or about an axis, the additional range of motion not being in a substantially vertical direction.

30. The method of claim 29 wherein at least one of the first substantially vertical range of motion and the second substantially vertical range of motion is a compliant range of motion.

31. The method of claim 30 further comprising the step of:

adjusting a position of the load within the compliant range of motion by adjusting a fluid pressure which at least partially provides the compliant range of motion.

32. The method of claim 29 wherein said step of providing a coupling includes providing a rotative coupling between the first support structure and the second support structure.

33. The method of claim 32 wherein the rotative coupling provides a rotative compliant range of motion to the load about a rotative axis.

34. The method of claim 32 or 33 further comprising the step of:

providing a second rotative coupling between the second support structure and the load, the second rotative coupling providing the load with a rotative range of motion about a second rotative axis.

35. The method of claim 29 wherein said step of providing a coupling includes providing a coupling between the first support structure and the second support structure, the coupling providing the additional range of motion to the load in a substantially horizontal direction.

36. An apparatus for remotely changing a position of a regulating control device, the regulating control device regulating a force for at least partially supporting a load, said apparatus comprising:

a remote unit for varying a fluid pressure, the variation in fluid pressure corresponding to a change in the position of the regulating control device in at least one direction;

a coupling coupled between said remote unit and the regulating control device, said coupling being configured to change the position of the regulating control device based on the variation in fluid pressure; and

a fluid carrier for providing the change in fluid pressure from said remote unit to said coupling.

37. The apparatus of claim 36 wherein the regulating control device is configured to regulate the force for at least partially supporting the load in a compliant state in a direction or about an axis.

38. The apparatus of claim 37 wherein the regulating control device is configured to regulate the force for at least partially supporting the load in a compliant state in a substantially vertical direction.

39. The apparatus of claim 36 wherein the change in position of the regulating control device results in a change in a position of the load within a range of motion of the load in a direction or about an axis.

40. The apparatus of claim 39 wherein the change in position of the regulating control device results in a change in a position of the load within a range of motion of the load in a substantially vertical direction.

41. A method of remotely changing the position of a regulating control device, the regulating control device regulating a force for at least partially supporting a load, said method comprising the steps of:

varying a fluid pressure, via a remote unit, where the variation in fluid pressure corresponds to a change in the position of the regulating control device in at least one direction;

providing the change in fluid pressure, via a fluid carrier, from the remote unit to a coupling coupled between the remote unit and the regulating control device; and

changing the position of the regulating control device through the coupling based on the variation in fluid pressure.

42. The method of claim 41 wherein said step of changing the position of the regulating control device results in a corresponding change in the force, the force at least partially supporting the load in a compliant state in a direction or about an axis.

43. The method of claim 42 wherein the force at least partially supports the load in a compliant state in a substantially vertical direction.

44. The method of claim 41 wherein said step of changing the position of the regulating control device results in a change in a position of the load within a range of motion of the load in a direction or about an axis.

45. The method of claim 44 wherein the change in the position of the load within the range of motion is in a substantially vertical direction.

46. An apparatus for manipulating a load, said apparatus comprising:

a support structure for supporting the load, said support structure providing the load with a range of motion, said range of motion being a compliant range of motion; and

a remote unit for adjusting a fluid pressure of a fluid system through a fluid carrier, the fluid system providing at least a portion of the force for supporting the load within the compliant range of motion,

wherein an adjustment of said fluid pressure via said remote unit adjusts the force for supporting the load.

47. The apparatus of claim 46 wherein said remote unit is configured to adjust said fluid pressure to balance the load in a substantially weightless condition within the compliant range of motion.

48. The apparatus of claim 46 wherein said remote unit is configured to adjust said fluid pressure to adjust a position of the load within the compliant range of motion.

49. A method of manipulating a load, said method comprising the steps of:

providing a support structure for supporting the load, the support structure providing the load with a compliant range of motion; and

varying a fluid pressure through a fluid carrier, via a remote unit, where the fluid pressure provides at least a portion of a force for supporting the load within the compliant range of motion.

50. The method of claim 49 wherein said varying step includes varying the fluid pressure to balance the load in a substantially weightless condition within the compliant range of motion.

51. The method of claim 49 wherein said varying step includes varying the fluid pressure to adjust a position of the load within the compliant range of motion.

52. A method of manipulating a load, said method comprising the steps of:

at least partially supporting the load in a compliant state in a direction or about an axis by pressurizing a fluid, such that the load may be moved in the direction or about the axis using a first manual amount of force; and

remotely adjusting the fluid pressure such that the load may be moved in the direction or about the axis using a second manual amount of force until an operator can manipulate the load in the direction or about the axis, the second manual amount of force being less than the first manual amount of force.